

flitting about quite freely, although it had not been noticed on the other side of the Pass, the ♀s with a tendency to blue scaling on the hindwings. Then we found a sunny corner, where a steep, stony, torrent-bed had been torn out, down to the river, and the rough sides were covered with willows, birches, and little poplars, and here was real destruction, for the larvæ of *Leucoma salicis* had, in some cases, absolutely stripped the willows and poplars, and hundreds were flying everywhere, whilst the spittle-like covering of their eggs was seen on the stems, leaves, and stones, almost everywhere. But I was more interested in the fact that some small fritillaries were flying freely, and, netting them, I found them to be *Brenthis amathusia*, *Melitaea dictynna* and *Melitaea athalia* (?), the mountain form; but oh, how disappointing it was, for all the species were *passé*, and specimen after specimen was captured only to be rejected. More than a half-hour was spent on them, and the total results were 9 *M. athalia*, 2 *M. dictynna* and 2 *B. amathusia*, just good enough to take, in spite of the fact that, as they swung in the afternoon sun on the scabious flowers, they really looked quite lovely. However, a closer inspection proved that our standard for cabinet purposes was higher than their condition, so we had to let them go. A thought of moving on drew attention to the fact that the sun had left the road in the upper part of the valley, and so we lingered a little longer and returned, feeling that, so near the town, and so low down, the season already appeared to be over.

(To be continued.)

Notes from the Pyrenees (with three plates).

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I spent, last summer, a few weeks in the central Pyrenees, chiefly at Gavarnie. In visiting them the principal object I had in view, was to observe *Erebia lefeberæi*.

The Pyrenees are not visited by English entomologists in any numbers, yet they are as accessible, and entomologically as attractive, as, say, the much more frequented Switzerland or the Tyrol. Accessible must, however, be taken *cum grano*, there is no difficulty in getting there, but suitable resting-places, except at the lower levels, are much fewer. Anything, however, I might have to say, either about travelling in these mountains, or their general entomological features, is said so much better than I could do it by Mr. H. Rowland-Brown in the *Entomologist*, 1905, p. 243, that I will confine myself more particularly to a few special items in which I was interested.

MARASMARCHA TUTTODACTYLA, Chapman.

Marasmarcha tuttodactyla is abundant at Gavarnie and other places, near Luz, Gedre, etc., and is probably common in the south of France. Monsieur Rondou knows it as *M. phaeodactyla*, and there can be little doubt that it is not distinguished from *M. lunaedactyla* (*phaeodactyla*) by French entomologists, and the two species together form in their minds, books and descriptions, their pictures of *M. lunaedactyla*. The distinction between the two species is unmistakable when the ancillary appendages are examined, those of *M. lunaedactyla* being symmetrical, of *M. tuttodactyla* different on the two sides. Mr. E. R. Banks has been kind enough to examine a short series of *M. tuttodactyla*, and to give me a description of the points in which it differs from *M. lunaedactyla*.

He says "about 60 *M. lunaedactyla*, some bred, some caught, have been used for the comparison.

To my eye, *M. tuttodactyla* differs from its ally in the following points:—

(1) Its ground colour is apparently more variable in tone, appears to be much less uniform owing to points 2, 3, and 4.

(2) It has an oblique whitish bar across the outer half of the upper lobe, and often a similar, though less well-defined, bar across the outer half of the lower lobe of the forewing. If ever present, these markings are exceedingly rare in *M. lunaedactyla*, I have only one reputed *M. lunaedactyla* that shows them; it stood in a British collection, but without data, and I now suspect that it came from the continent, and is *M. tuttodactyla*. It has been repinned.

(3) The dorsal margin of the forewing tends to be strongly, though irregularly, marked with white from below the end of the cleft inwards. This tendency is much stronger than in *M. lunaedactyla*.

(4) Both lobes of the forewing have the outer half of the upper cilia more or less distinctly whitish. This is not the case in *M. lunaedactyla*.

(5) It has the antennæ rather lighter and more conspicuous than *M. lunaedactyla*, owing to the white rings being broader than in the latter species, and the dark ones consequently narrower."

One might readily set down these differences as the peculiarities of a pale southern race were it not for the remarkable distinctness in the appendages.

At Gavarnie its foodplant is *Ononis natrix*, and it does not touch an *Ononis* that I could not distinguish from our common *O. arvensis*. M. Rondou says, nevertheless, "larva on *Ononis repens*" (but printed *reptans*) (a synonym of *arvensis*, and, doubtless, the species I observed). I fancy, however, that the record is not from his own observations, but quoted from accounts of *M. phaeodactyla*. In Dauphiny, Mr. Tutt found it amongst *Ononis cenisia*. It is clearly a comparatively southern and hill form, whilst *M. lunaedactyla* is a more northern species, affecting, however, lower ground.

The precise relationship of *Marasmarcha tuttodactyla* will be more clearly appreciated by a reference to the figures of the ancillary appendages of all the species of *Marasmarcha* I have so far been able to examine.

The genus *Marasmarcha*, entirely apart from these appendages, occupies a special position amongst the plumes; whether its larval, pupal or imaginal character be taken as guides, it is difficult to say whether the genus belongs to the Platyptiliid or Alucitid (Aciptiliid) divisions, to one or other of which nearly all other genera (Agdistids apart) are easily referred. There can, in fact, be no doubt that it occupies an intermediate position between the divisions. This determination is amply confirmed by a reference to the ancillary appendages.

The Platyptiliids have these organs symmetrical, and the clasps are simple. The Alucitids (Aciptiliids) have the clasps on either side different from the other, and an armature usually somewhat like a hair or bristle. In the figures of *Marasmarcha* herewith, it will be seen that all have a hairlike armature, and, of the six, three are symmetrical and three are asymmetrical. The asymmetry affects, however, only the bristles (the especially Aciptiliid feature) and not the bodies of the clasps.

The appendages of *M. lunaedactyla* are the most difficult to mount fully displayed of any I know, the one photographed is perhaps as

successfully done as any I have mounted, but even in it, the hairs on one side have been disturbed in the process, and give an erroneous impression of differing from those on the other. In *M. lunaedactyla* the appendages are quite symmetrical, the two hairs which each clasp carries have the appearance of being a disc or medal sunk into the middle of the clasp, as they are curved round into a circle. In *M. tuttodactyla*, the whole appendages are smaller than in *M. lunaedactyla*, and the hairs on one side are not very dissimilar from those of that species, but are shorter and do not make a complete circle, and, on the other side, they are very short and straight. A vastly greater difference than one would expect to find in two imagines that resemble one another so closely. *M. tuttodactyla* is very close indeed to, if not identical with, *M. agrorum*, and I think the differences seen in the figures come within the limits of variation due to geographical (climatic or other) causes, that may occur in races of one species. Allowance has to be made in the figures for the hairs having been more completely removed in mounting the specimen of *M. tuttodactyla*, and a difference in the pressure used. I have only the one specimen of *M. agrorum*, but some specimens of *M. tuttodactyla* approach it more nearly than those figured. I incline, therefore, to believe that *M. tuttodactyla* is probably a race of *M. agrorum*, but am not at all positive about it. The appendages of *M. fauna* (from the Riviera) form a very elegant object, the hairs are highly curved but far from forming a circle. The clasps are quite symmetrical.

The other two are on a much larger scale, both are from specimens obtained from Staudinger, one under the name of *Platyptilia asiatica*, is unquestionably a *Marasmarcha*, and has very large curled bristles. It is quite symmetrical, the appearance to the contrary is due to one of the clasps being turned over. The clasp of the other, *M. colossa* probably points to generic separation from *Marasmarcha*. The hairs long and curled on one side, very short and straight on the other, are, of course, typically Marasmarchid, associated as they are with clasps otherwise symmetrical. But the spines on the clasps differentiate it from the other species. As regards dividing the Marasmarchids into several genera, the difference between *M. lunaedactyla* and *M. tuttodactyla*, as shown in the clasps, is that between not two genera, or two tribes, but between the subfamilies of Platyptiliids and Alucitids (Aciptiliids), yet the imagines are so close as to have long escaped recognition of their being distinct, and are, unquestionably, very closely related to each other, and we must admit that what for the mass of "plumes" is a difference of subfamily importance, here has a value involving only specific rank.

In comparing the larvæ of *M. tuttodactyla* and *M. lunaedactyla*, one finds that the resemblances are extremely close, and the differences are, in fact, in degree, not in kind. The hairs of *M. tuttodactyla* are rather thicker and much paler than in *M. lunaedactyla*, and the accessory postspiracular tubercle is always well-developed, always having three, and often four, hairs. On the same tubercle in *M. lunaedactyla*, even four hairs sometimes occur, but, as a rule, one finds only two, and a solitary hair is not uncommon. The larvæ is also decidedly paler.

The pupæ are again extremely similar, but there are some differences in the outline of the halb-ber-shaped dorsal spines. It would be difficult to assert these to be more than varietal, and they do not lend

themselves easily to description ; there is, however, at least one difference that is fairly entitled to specific rank. On the 2nd abdominal segment there is, in *M. lunaedactyla*, a strong hook, rising up above the anterior hair, and giving the armature of this segment much the same character as that on the 4th and following segments. In *M. tuttodactyla* there is no such hook, the armature is wanting much as in the 1st abdominal segment. In one specimen I found a slight projection here, and, in a few *M. lunaedactyla*, the hook is a little less developed, but there is still a gap between those specimens that most approach each other. The pupa of *M. lunaedactyla* is often green, I do not think I found one of *M. tuttodactyla* of that colour, on the other hand, they varied from pale grey to absolutely black, not a few being of that tint. I do not remember ever to have seen a black pupa of *M. lunaedactyla*, though some are fairly dark. It may be noted that the pupa of *Stangeia* (Tutt) *siceliota*, on *Ononis natrix*, varies from pale to quite black. [By the way, I can find "*Stangeia*"* nowhere but in Tutt's *British Lepidoptera*, vol. v., p. 492, where it occurs in a quotation from me, but placed there by Mr. Tutt, not by me.] I quite agree, however, that *siceliota* is abundantly distinct generically from *paludum*.

PLATE VI.

PHOTOGRAPHS OF TWO SPECIMENS OF ANCILLARY APPENDAGES OF *MARASMARCHA TUTTODACTYLA* $\times 45$.

FIG. 1.—On slide (and compressed) laterally.

FIG. 2.—Opened out, and dorsal portions separate. In fig. 1, the two hairs are seen coiled round on one clasp ; on the other, the short, straight hairs, directed across (apparently, in the flattened specimen) to those of the other side, are not very apparent at first view ; the vacancy in the area, that is occupied in the other clasp by the circling hairs, is very obvious, as it is also in fig. 2, in which the two short hairs are lying along the axis of the clasp.

PLATE VII.

FIG. 1.—Ancillary appendages of *Marasmarcha agrorum* $\times 18$.

FIG. 2.—Ancillary appendages of *M. tuttodactyla* $\times 18$. Allowing for the slightly different attitudes of the specimens, the differences between figs. 1 and 2 are slight ; the more robust shaft of the clasp in *M. agrorum* is, apparently, a real difference. *M. tuttodactyla* is seen better in pl. vi.

FIG. 3.—Ancillary appendages of *Marasmarcha fauna* $\times 18$. These are symmetrical, but smaller and more delicate in structure than those of *M. lunaedactyla* (pl. viii., fig. 3) ; the two hairs are not held down in a hollow, into an exact circle as in that species.

PLATE VIII.

FIG. 1.—Ancillary appendages of *Marasmarcha asiatica* $\times 18$ (forwarded by Staudinger as *Platyptilia asiatica*). One clasp is folded over, so as to make the very bold double hairs appear to curve in different directions in the two clasps ; they are, however, quite symmetrical.

FIG. 2.—Ancillary appendages of *Marasmarcha colossa* $\times 18$. The double hairs are asymmetrical ; the short hairs on left clasp well shown ; the spurs on clasps appear to entitle this species to separate generic rank.

FIG. 3.—Ancillary appendages of *Marasmarcha lunaedactyla* $\times 18$. This fig. shows the double circular hairs, symmetrically placed in each clasp ; the appendages are decidedly larger and more robust than in *M. tuttodactyla* or *M. fauna*.

* This is so. *Stangeia* was created for *siceliota* to separate it generically from both *Buckleria* and *Trichoptilus*. It was intended to deal with this in *Nat. Hist. Brit. Lep.*, vol. v., but was quite overlooked. It is a very distinct genus, with type *siceliota*.—ED.